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MYOCARDIAL ISCHEMIA AND INFARCTION

DETECTION OF DISRUPTED PLAQUES BY CORONARY COMPUTED TOMOGRAPHY

ACC Poster Contributions
Ernest N. Morial Convention Center, Hall F
Sunday, April 03, 2011, 10:00 a.m.-11:15 a.m.

Session Title: Unstable Ischemic Syndrome -- Clinical: Platelet Reactivity, Plaque Vulnerability and Outcomes
Abstract Category: 2. Unstable Ischemic Syndrome–Clinical
Session-Poster Board Number: 1002-336

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Background: Disrupted plaques are the major cause of acute coronary syndrome (ACS). Although the detection of vulnerable plaques by CCT has been examined and reported, there has been no report on the detection of disrupted plaques by CCT.

We investigated the ability of coronary computed tomography (CCT) to detect disrupted coronary plaques.

Methods: Consecutive 32 patients with suspected ischemic heart diseases who received successful coronary angioscopic examination and CCT were analyzed. Yellow plaques of color grade 1-3 and disrupted yellow plaques were examined by angioscopy. CCT findings (low attenuation, positive remodeling, and ring-like enhancement) were examined for each site of yellow plaques.

Results: In 32 study patients, 65 yellow plaques were detected. Higher-color-grade yellow plaques and disrupted yellow plaques had significantly higher incidence of CCT findings: low attenuation (Grade-1 vs. Grade-2 vs. Grade-3, 18% vs. 59% vs. 69%; Non-disrupted vs. Disrupted, 36% vs. 66%), positive remodeling (24% vs. 59% vs. 75%; 33% vs. 75%), and ring-like enhancement (0% vs. 19% vs. 25%; 6% vs. 44%). Positive and negative predictive values for the combined CCT findings (low attenuation, positive remodeling, and ring-like enhancement) were 90% and 58%, respectively.

Conclusions: CCT findings were well associated with the disrupted plaques confirmed by angioscopy and had high positive predictive value, although the negative predictive value was rather low.